NEW GENERA AND SPECIES OF CHINESE CICADAS WITH SYNONYMICAL AND NOMENCLATORIAL NOTES*

By Kan-fan Chen
University of Minnesota, St. Paul, Minnesota

The Chinese species of the family Cicadidæ have been described and named for the most part by European workers whose writings are scattered through a great number of publications. The Chinese species of this family were named and described earlier than other groups of Chinese insects. The first Chinese species was described by Linné and named *Cicada repanda* based on specimens from India. In 1773 Drury described a species from China which he called *Cicada maculata,* but did not give a definite locality, and in the same year De Geer described and named a third species, *Cicada sanguinea.* Many additional Chinese species were described subsequently by Fabricius (1775–1803), Olivier (1790), Westwood (1824), White (1844), Signoret (1849), Walker (1850 and 1858), Stål (1863–1870), Motschulsky (1866), Uhler (1861–1862) and Karsch (1894).

Most of the cicada material described by the earlier writers was made available through the incidental collecting of travelers and missionaries who failed to record definite locality data. Thus, many type locality names need confirmation because the collectors either transliterated Chinese names to English, German, French, etc., or in modern times the Chinese names have been changed, or only the name of the country "China" was given. This has caused considerable confusion and lack of knowledge regarding the geographical distribution of the cicadas recorded from China.

The most valuable cicada material available in museums is largely the result of organized collecting expeditions. The most important collectors who participated in these various expeditions are as follows:

* Selected portions of a thesis entitled "A Contribution to the Knowledge of Chinese Cicadas," submitted to the Faculty of the Graduate School of the University of Minnesota in partial fulfillment of the requirements for the degree of Master of Science.

POTANIN. C. N. Potanin started from Peiping the latter part of 1892 and proceeded to Tian-fu and from there crossed over the Tsinling mountains. He then visited Chengtu, Ya-an and Ta-tsien-lu, the present provincial capital of Sikang Province. From here he went northward to Changu, Fu-pien, Hung-kiao and Li-fan, all of which are in the northwest part of Szechwan Province. Here two of his fellow travelers were taken ill which necessitated his return to Peiping. On the return trip he collected at Shi-tsuan, Chang-ming and Pao-ning, all in the northern part of the Province of Szechwan. The material he collected on this trip was deposited in the Zoological Museum of Leningrad. Cf. Melichar (1902).

BEREZOVSKI. M. Berezovski traveled from Peiping to Hui (= Wei) in southeastern Kansu Province. He remained there from March to December, 1892. From Wei he proceeded to Lung-an, Szechwan, to Chengtu, the provincial capital of Szechwan and back to Lung-an. He remained near there at the village of Mu-kua-chi, District of Hotsingou, from April, 1893, to January, 1894, and then returned to Peiping. His cicadas were deposited in the Zoological Museum of Leningrad. Cf. Melichar (1902).

KERSHAW. Wm. Kershaw collected in South China principally at Hanlik and Macao. His material was reported upon by Kirkaldy (1909).

MUIR. F. Muir collected at Lu-fou-shan and Macao in Kwangtung Province. Kirkaldy (1909) reported on his cicada material.

The Chinese cicadas reported upon in numerous papers by W. L. Distant came from many sources. Some of the collectors of the specimens he recorded are Horsfield, Bowring, Whitehead, Cros-Jean, David, Excoffier, Maw and the Chinese collector and taxidermist Tan Wang-wang. Haupt (1923) reported on the material collected by Walter Stötzner near Peiping and Western Szechwan. Schmidt's (1920) material was collected by R. E. Mell. Schmidt (1933) also reported on the material collected by Dr. C. F. Wu of Yenching University. The Heude Museum, Shanghai, has had collectors for many years in the Provinces of Kiangsu, Chekiang and Anhwei. China (1925) reported on the material collected by Gregory in Yun-nan Province. Schumacher (1915) described the material collected by H. Sauter in Formosa.

The writer, as an employee of the University of Nanking, undertook a collecting trip designed primarily for the collection of insects for the entomology museum at the University of Nanking. The author departed from Nanking and collected along the Tientsin-Pukow railway line to Peiping returning by way of the Peiping-Hankow railway line to Chengchow. A whole summer was spent at Tienmushan, Chekiang Province, and at Hwangshan, Anhwei Province. In 1937, another trip was made to Southern Chekiang Province and Kuling, Kiangsi Province. In 1938, an opportunity arose to collect specimens in Szechwan Province. Along the northeastern border of this province there are high mountainous ranges, undulating inward from Tibet. On these high ranges the fauna is Palæarctic, while at their foot and on the plains the species are typically Oriental. The writer climbed to the Tibet border (6,000 feet in the valley) and lived in a Lama Temple for five weeks. During this trip, numerous specimens were added to the collection. In the same year, specimens were also extensively collected by colleagues at well-known Mt. Omei, 10,400 feet above sea level.

My study of the cicadas leads me to believe that the natural boundary separating the Palæarctic and Oriental Regions in China is the Yang-tsze River. Faunal studies of other groups of animals have led to different opinions. Along each side of the Yang-tsze River, there is a sort of "debatable land" where Palæarctic and Oriental forms strive for supremacy. The Palaearctic part of China consists of two subregions, Manchurian and Siberian. The dominant forms of cicadas in the Manchurian Subregion are the species of *Tibicen* and a few species of *Melampsalta* and *Tibicina*. It is interesting to note that all these genera also occur in the Nearctic Region. One species of *Melampsalta* recorded from the Balkans, and another species of the same genus recorded from Turkestan, are both present in Northern Szechwan. The cicada fauna of the Manchurian Subregion has a strong affinity with that of the Siberian and European Subregions on the one hand and with that of the Nearctic Region on the other. The Oriental fauna of China consists of a greater number of genera and species, which are gradually reduced in numbers as one proceeds toward the north and east towards the Palæarctic Region

and only a few species actually extend into the Manchurian Subregion. This would seem to indicate that the Oriental cicada fauna in China is the result of the invasion from the Indo-Malayan Region. The Yang-tsze River is a more or less natural boundary between these two great Zoological Regions. This boundary extends westward along the Yang-tsze River through the Yang-tsze Gorge; it then leaves the River and turns northward along the southern slope of the Chungnanshan and Tsinling ranges to the border of the Tibet Plateau and then continues with the Himalayan mountains. I do not agree with those who suggest that the boundary extends along a certain degree of latitude.

The present paper includes descriptions of new genera, new species, synonymical notes and nomenclatorial changes. The complete thesis treating all the species available for study and containing extensive data on geographical distribution is on file in the library of the University of Minnesota.

This study was carried out under the supervision of Dr. C. E. Mickel and the writer wishes to express sincere thanks for his valuable suggestions and criticism. Thanks are also due to Dr. H. S. Chen of the National Institute of Zoology and Botany, Academia Sinica, Nanking, for presenting me with the specimens from Kwangsi and Kweichow Provinces. Dr. We-i Yang and Mr. A. S. Chao of the Fan Memorial Biological Institute, Peiping, sent me a collection from Hainan, Kwangtung Province, and Chungnanshan, Shensi Province. In 1938, Prof. Y. Chou of the North Western Agriculture College collected for three months in Sikang Province (eastern Tibet). He was kind enough to turn over to me all the cicada specimens collected during his trip. I would like to mention those who assisted in the building of the University of Nanking cicada collection: Messrs. C. S. Tsi and S. O. Hsia of the Division of Entomology, University of Nanking; Dr. Y. D. Feng, Nankai University, Tientsin, Manchurian collection; Mr. C. Y. Liu, Kwangsi University, Liuchow, Kwangsi specimens; Chekiang Bureau of Entomology, Hangchow; Kiangsu Bureau of Entomology, Nanking; Mr. K. F. Chu, Kwangtung Provincial Bureau of Agriculture and Forestry, Kwangtung specimens; Mr. K. R. Wang, Sun Yat-son University, Canton, Canton specimens; Mr. C. C. Tao, Shantung University, Tsingtao

specimens; Mr. I. F. Yang, Bureau of Reconstruction, Foochow, Fukien specimens; Father P. O. Piel, the Director of the Heude Museum, Shanghai, Kuling specimens.

Dundubia vaginata Fabr.

1754. *Cicada mannifera* Linné, Mus. Ad. Frid.: 84.
1787. *Tettigonia vaginata* Fabricius, Mant. Ins. 2: 266 (Sumatra).
1850. *Dundubia immacula* Walker, List Homop. 1: 50 (Tenasserim).
1850. *Dundubia nigrimacula* Walker, List Homop. 1: 63 (Java).
1850. *Dundubia sobria* Walker, List Homop. 1: 63 (Hong-Kong).
1850. *Dundubia varians* Walker, List Homop. 1: 48 (New Holland).
1867. *Fidicina confinis* Walker, J. Linn. Soc. Zool. 10: 92.
1923. *Dundubia vaginata* Moulton, J. Fed. Mal. Sta. Mus. 11 (2): 63 (Malaysia, India, China, North Australia).
1933. *Dundubia mannifera* Schmidt, Pek. N. H. Soc. Bull. 7: 124 (Canton).
1940. *Dundubia mannifera* Liu, Bull. Mus. Comp. Zool. 87: 88, pl. 5, f. 25.

This species was first recorded as *Cicada mannifera* in 1754 by Linné. Stål (1866) found out that it was the same species as Fabricius' *Tettigonia vaginata.* Moulton (1923) pointed out that *mannifera* was a prelinnean name and was not subsequently recorded by Linné in his other writings, so *D. mannifera* L. should be changed to *D. vaginata* Fabr. Although, in 1764, Linné mentioned *Cicada mannifera* as a synonym of *Cicada tibicen* from Surinam and Carolina, this does not validate the name.

Genus *Platylomia* Stål

Genotype: *Cicada flavida* Guerin. Monobasic.

Platylomia 1870. Stål, Öfv. Vet.-Ak. Förh.: 708, note.
1905. Distant, A. M. N. H. (7) 15: 65.
1923. Moulton, J. Fed. Mal. Sta. Mus. 11 (2): 97.

Stål proposed the genus *Platylomia* and included the single species *Dundubia flavida* Guérin. According to the rules of Zoological Nomenclature, a genus proposed to include a single species

must take that species as genotype. Distant used Stål's name and redescribed the genus, stating that the characters given by Stål cannot be accepted because they refer to Guérin's figure and cannot be found in the species. Distant designated another species *Tettigonia spinosa* Fabr. as the genotype of *Platylomia,* but his designation cannot be accepted because of the above rule. Distant stated that *flavida* Guérin and *spinosa* Fabr. are congeneric, therefore the recognition of *flavida* Guérin as the correct genotype does not affect Distant's concept of the genus *Platylomia.*

According to Distant, this genus includes those species having the head (including the eyes) about as wide or little wider than the base of the mesonotum and almost as long as the breadth between eyes. He put this genus in a group possessing the length of head equal to the breadth between the eyes. Moulton pointed out that the head of *P. flavida* is distinctly shorter than the breadth between the eyes. This is also true of all the Chinese species in the genus.

Tibicen slocumi sp. nov. (Fig. 1)

MALE. Head deflected anteriorly, much shorter than space between the eyes, including the eyes wider than the base of mesonotum. Front prominently produced; front and anterior lateral angles of vertex not continuous; front ochraceous, a subquadrangular spot at each side black. Vertex ochraceous, a trapezoidal spot with the sides diverging posteriorly, a lateral broad band between it and the eyes, and the area posterior to eyes, black. Eyes yellowish brown, projecting beyond the anterior margin of pronotum. Ocelli about twice the distance apart from eyes as from each other.

Pronotum a little longer than the head, and shorter than the mesonotum (excluding cruciform elevation), its lateral margins ampliated; pronotum ochraceous, two narrow, median, linear, longitudinal fasciæ much widened laterally at the anterior ends, and terminating posteriorly in a circular spot, all black. Lines between the disk and the lateral and posterior marginal areas, black.

Mesonotum black, with a central w-shaped spot and with lateral, longitudinal, marginal fasciæ, greenish ochraceous; a black spot at the center of the cruciform elevation.

Abdomen above black, with a series of oblique, whitish spots on each side of the abdominal segments. Lateral fourths of tympanal coverings greenish ochraceous. Eighth tergite longer medially than the two preceding ones. Ninth tergite prolonged behind to form a pair of angular projections. Anal tergite shining black with an ochraceous spot at the posterior margin.

Tegmina and wings hyaline. Tegmina with the costal membrane and

basal cell greenish ochraceous; basal cell about twice as long as wide, infuscated; veins inside the almost obsolete nodal line greenish ochraceous, the outer part of the veins piceous, the vein in front of the basal cell also piceous; the cross veins at the bases of the second, third, fourth, fifth and seventh apical areas infuscated. Wings with veins of the basal half ochraceous, the apical half piceous. The extreme base of tegmina and wings ochraceously sanguineous; margins of claval area of wings semi-opaque.

Body beneath ochraceous, covered with thickly greyish pile. Antennæ, transverse striations to face, the broad fascia between eyes and face, areas adjacent to eyes, disks of lora, lateral depressed areas of clypeus, mesopleura, metepisternum, lower surface of coxæ and apex of rostrum, all black. Two strong spines on front femora and small spines on hind tibiæ, castaneous, the hind spine of the front femora not erect, but closely appressed against the surface of femora, the apical spine projecting outwardly. Opercula reaching the hind margin of the second sternite; lateral margins straight, strongly turned upward; posterior margins convexly rounded and slightly overlapping at their inner margins; color ochraceous.

Abdomen beneath brownish black, the second sternite, the posterior margin of third to sixth sternites ochraceous. Subgenital plate ochraceous with a transverse black fascia on the anterior portion, its length equal to the three preceding segments, posterior half somewhat transversely wrinkled, posterior margin more or less truncate. Hypandrium as long as subgenital plate, ochraceous in color, longitudinally convex, the posterior margin broadly rounded. Spiracles adorned with white powder.

Length of body, 35 mm.; expansion of tegmina, 96 mm.

Holotype: male, Lifan, Szechwan Province, China, August 20, 1939 (Chen), in collection of the University of Nanking.

Allotype: female, larger; anal tergite longer medially than the two preceding segments, posteriorly produced into a strong spine. Genital plate about twice as broad as long, posterior margin deeply cleft medially.

Length of body, 38 mm.; expansion of tegmina, 102 mm.

Allotype: female, Lifan, Szechwan Province, China, August 20, 1939 (Chen), in collection of the University of Nanking.

Paratypes: four males and one female collected at the same place and on the same date with the holotype by Chen; length of male paratypes varies from 33.5 to 37.5 mm.; expansion of tegmina, 89 to 98 mm. Length of the female paratype is 35 mm.; expansion of tegmina 100 mm. One male paratype is deposited in the National Institute of Zoology and Botany, Academia Sinica, Nanking, China. One male paratype is deposited in the Department of Entomology and Economic Zoology, University

of Minnesota, U. S. A. The rest are in the collection of the University of Nanking.

This species is closely allied to *sinensis* Distant, but it differs by the larger size, infuscation of the fifth and seventh apical areas, absence of the black band across the posterior margin of the pronotum, and the color of the venation of the tegmina.

FIG. 1. Tegmen and hind wing of *Tibicen slocumi* sp. nov.

Tibicen tsaopaonensis sp. nov. (Pl. I, Fig. 1)

This species in general appearance is very closely related to *T. sinensis* Distant. The markings of the body are similar to the latter. The characters which separate it from *T. sinensis* are as follows:

1. The hypandrium of the new species equal in length to the subgenital plate, that of *sinensis* longer than the latter.

2. The greatest width of the subgenital plate in *tsaopaonensis* longer than the length of the four preceding abdominal sternites, while in *sinensis* it is equal only to the length of the four preceding sternites.

3. The eighth tergite in this species longer than the sixth and seventh tergites together; in *sinensis* the length of the eighth tergite is equal to the length of the sixth and seventh tergites.

4. A wide zigzag infuscated band coincides with the bases of apical areas across the tegmen, only broken at the base of the sixth apical area. In *sinensis* only the bases of the second and third apical areas infuscated.

5. On the tegmen, a small areole is separated from the apex of the radial area, while this is absent in *sinensis*.

6. In *tsaopaonensis*, the apical portion of the basal cell is blackish and the claval area of wings strongly infuscated, while in *sinensis* the basal cell is uniform in color throughout and the claval area of wings only very slightly infuscated.

7. In this species both the fore and hind wings are slightly, obscurely infuscated and the veins are darker in color. In *sinensis* they are hyaline and the color of veins is lighter.

8. The abdomen is dull black, and one pair of whitish oblique pubescent dots on the lateral sides of only the first abdominal tergite. The posterior margin of eighth tergite is yellowish. In *sinensis*, there is a pair of whitish pubescent dots on each of the tergites. The posterior margin of the eighth tergite concolorous.

9. The species is larger in size than *sinensis*.

Holotype: male, Tsaopao, Western Szechwan Province, China, August 9, 1938 (Chen), in the collection of the University of Nanking.

Chremistica nana sp. nov. (Pl. II, Fig. 9)

Male. Body above ochraceous. Head including eyes wider than the base of the mesonotum. Length of the head scarcely more than half the breadth between the eyes. Front and the anterior and lateral angles of vertex continuous. Front and vertex medially and longitudinally sulcate. A continuous, broad, black fascia across the anterior portion of front, and the anterior and lateral margins of vertex. Eyes obliquely porrect; color fuscous. Ocelli about twice the distance from eyes as from each other, color pinkish red.

Pronotum longer than head, much shorter than the mesonotum (excluding cruciform elevation), its width more than two times its length, deflected anteriorly. Pronotum with incisures; mesonotum with faint obconical spots on its disk, and the lateral triangular markings faintly castaneous.

Abdomen equal to the length of the head and thorax together, attenuated posteriorly with the posterior segmental margins brownish ochraceous. Anal tergite produced posteriorly into a strong spine, its posterior margin deeply concave laterally. The first three abdominal segments much shorter than the following segments. Eighth tergite medially equal to the sixth and seventh tergites together. Width of fifth tergite equal to the length of the first four tergites together.

Tegmina and wings hyaline. The width of the tegmina about one-third its length. Venation ochraceous on the basal half, fuscous on the apical half. Tegmina with nine apical areas; wings with six apical areas.

Body beneath and legs, pale ochraceous, yellowish pilose, covered with whitish powder. Apex of the rostrum, and claws, piceous. Three spines beneath the front femora, two near the distal part, and one near the base. The most distal one is very small. Opercula about half the length of the abdomen, with the disk slightly convex, yellowish pubescent and covered with white powder; outer margins of opercula almost straight and obliquely slanting inward, leaving the tympanal orifices laterally exposed, the inner margins sinuate near the basal fourth and nearly overlapping throughout, the posterior margin convexly rounded. Rostrum exceeding intermediate coxæ. Coxal thorn thin, concave on the ventral surface, curved inwardly and reaching the basal third of the operculum. The subgenital plate depressed immediately near the base, its length equal to the two preceding sternites. Hypandrium longer than subgenital plate, globose, projecting beyond the anal tergite. The posterior margin of the subgenital plate slightly emarginate.

Length of body, 18 mm.; expansion of tegmina, 58 mm.

Female smaller than the male. The tegmina with eight apical areas, the extreme base lightly ferruginous. Two linear fuscous fasciæ on the disk of mesonotum. The posterior margin of genital plate deeply concave.

Holotype, male; allotype, female, Hainan, South China, April

5, 1934. Holotype in Fan Memorial Biological Institute, Peiping; allotype in the University of Nanking.

This species is closely allied to Walker's *ochracea*. The size is much smaller than *ochracea*. A strong spine is not formed in *ochracea*. The hypandrium is longer than the subgenital plate, but it is shorter than the subgenital plate in *ochracea*. The abdomen in this species is attenuated, the width of the fifth abdominal segment being equal to the length of the first four abdominal segments. In *ochracea,* the abdomen is more or less parallel before the sixth segment, so that the width of the fifth tergite equals the combined length of the first five abdominal segments. The opercula of *nana* just about reaches the middle of the abdomen. They are distinctly more than half the length of the abdomen, and the tympanal orifices are entirely covered by the opercula in *ochracea*. The abdominal sternites are flat in Walker's species, while they are convex in *nana*.

All the other species in the Oriental Region are large; *C. nana* is the smallest species known.

Cryptotympana atrata Fabricius

1775. *Tettigonia atrata* Fabricius, Syst. Ent.: 681, (14) (China).
1787. *Tettigonia pustulata* Fabricius, Mant. Ins. 2: 266, (11) (America meridionali).
1790. *Cicada nigra* Olivier, Enc. Méth. 5: 749 (Chine).
1850. *Fidicina bubo* Walker, List Homop. 1: 82 (Hong-Kong).
1927. *Cryptotympana santoshonis* Matsumura, Ins. Matsum. 2: 49 (Santosho).
1932. *Cryptotympana pustulata* Kato, Mon. Cicad.: 57 (China, Formosa, Malay Archipelago).
1933. *Cryptotympana pustulata* Schmidt, Pek. N. H. Soc. Bull. 7: 122 (Canton, Peiping, Lushan, Longtschin, Formosa, Hong-Kong).
1938. *Cryptotympana pustulata* Ouchi, J. Shang. Sci. Inst. (3) 4: 82.
1939. *Cryptotympana pustulata* Liu, Not. D'ent. Chin. 6 (9): 153.
1940. *Cryptotympana santoshonis* Liu, Bull. Comp. Zool. Harv. 87: 81.

This species was first named by Fabricius in 1775, in his first publication, Systema Entomologiæ. On page 681 Fabricius described: *Tettigonia atrata* (14). "T. atra, alis albis, basi nigris; venis testaceis. Habitat in China. Gannerus. Magnitudo praecedentium: tota, abdominis margine, inprimis ultimi segmenti, testaceo. Alae omnes albidae, basi nigrae, venis testaceis."

In 1787, Fabricius on p. 267 of Mantissa Insectorum exactly repeated, "*atrata* 22. T. atra, alis albis, basi nigris; venis testaceis," and described another species, *Tettigonia pustulata,* habitat in America meridionali. Later both Olivier and Germar treated them as two species. These two names were proved to be one species by Distant (1891), but he incorrectly gave *pustulata* priority and considered *atrata* as being a synonym of *pustulata.* After that *atrata* disappeared from the publications of Distant, Matsumura, Jacobi, Schmidt, Moulton, China, Kato and Liu. Apparently *atrata* is a valid name and *pustulata* is a synonym of *atrata.*

Cryptotympana atrata var. **castanea** Liu

1940. *Cryptotympana pustulata* var. *castanea* Liu, Bull. Mus. Comp. Zool. 87: 82.

Cryptotympana atrata var. **fukienensis** Liu

1940. *Cryptotympana pustulata* var. *fukienensis* Liu, Bull. Mus. Comp. Zool. 87: 82.

Platypleura kaempferi Fabricius

1794. *Tettigonia kaempferi* Fabricius, Ent. Syst. 4: 23 (25) (Japonia).

1940. *Platypleura retracta* Liu, Bull. Mus. Comp. Zool. 87: 74, pl. I, f. 3 (Mt. Omei).

Recently Liu described a new species from Mt. Omei. I can not find any structural difference such as Dr. Liu pointed out. His most important character, that the anal tergite is retracted, is also true for *P. kaempferi.* In the long series in our collection, *P. kaempferi* shows a great variation in color, size, spots on the fore wings, powdery adornments and pilosity.

Platypleura cœlebs Stål

1863. *Platypleura cœlebs* Stål, Trans. Ent. Soc. Lond. (3) 1: 573 (India Orient).

Distant recorded this species from Chusan, in 1889, on the basis of a specimen found in the Indian Museum, Calcutta. The Heude Museum made several collections on that Island, but not one specimen was collected, and there is no record from any other part of China. The occurrence in Chusan needs confirmation. It may possibly be found on some of the Pacific Islands.

Platypleura semusta Distant

1887. *Pœcilopsaltria semusta* Distant, A. M. N. H. (5) 20: 227 (Chusan).

This is a tiny species described by Distant based on a single specimen from Chusan deposited in the Indian Museum. No specimens other than the type are known and the type locality is doubtful as in the case of *P. cœlebs.*

Suisha coreana Matsumura

1927. *Pycna coreana* Matsumura, Ins. Mats. 2: 46, pl. 2, f. 1 (Corea).

1939. *Pycna repanda* Liu, Not. D'ent. Chin. 6 (9): 150 (Hangchow) (nec. Linné).

The specimens in the Heude Museum, Shanghai, were incorrectly named by Liu as *Pycna repanda* L. *Suisha coreana* is common in Hangchow, Kashing, Nanking and westward to Chengtu, while *Pycna repanda* L. is an Indian species. Whether the latter extends to Hangchow or not I do not know. However, I did not collect *P. repanda* in Hangchow and up to the present time there are no specimens in the collection of the Bureau of Entomology, Hangchow. Liu (1939) indicated the possibility that his determination *Pycna repanda,* Hangchow, might prove to be *Suisha coreana.*

The adults appear very late and sing in the fall. The writer noticed the adults in Nanking and Chengtu; they are wiped out by the first frost. In Nanking, adults could be collected from September 10 to November 3. In Chengtu, it is warmer; there *S. coreana* can persist as late as December 31.

Pycna repanda Linné

1758. *Cicada repanda* Linné, Syst. Nat. Reg. Anim. 10th ed.: 436 (India).

Pycna repanda is a common species in N. India. It is not present in Eastern China and Japan. Haupt first recorded the species in Szechwan Province. This species almost always inhabits high mountains about 6,000 feet. At Mt. Omei and Wenchwan, the males continue to sing in the rainy and foggy weather. Mr. C. S. Tsi collected three specimens in the lantern trap at Kewlaotung about 8,000 feet up on Mt. Omei. Specimens in our collection are from Mt. Omei, Tsapao (Szechwan Province), Tanpa, Tsalou (Sikang Province), from July 25 to October 18.

Polyneura ducalis Westwood

1842. *Polyneura ducalis* Westwood, Arc. Ent. 1: 92, t. 24, f. 2 (East Indies).

This large, greenish insect lives on the leaves at the top of trees. A loud sound produced by the male when sitting on the tree and on the wing attracts our attention. They are found at an elevation of 7,000 feet to 8,000 feet on the high mountains in Szechwan and Sikang Provinces. The writer collected specimens from Tsaopao, Western Szechwan. Haupt's record from Omisien (= Mt. Omei) needs confirmation, for we were in Mt. Omei for three months but did not hear its song. One male from Tachow, Sikang Province, was presented by Dr. Y. Chou.

Gæana maculata var. consors Distant

? *Gæana consors* White, manuscript name.
1850. *Gæana consors* Walker, List Homop.: 253, nomen nudum.
1892. *Gæana maculata* var. *consors* Distant (nec. White), Mon. Or. Cicad.: 105, t. 3, f. 20 (India, Burma).

White's *Gæana consors* is a manuscript name. Although Walker (1850) listed *consors* and cited Proc. Zool. Soc. 1850, the name was never published by White. The first published description of *consors* is by Distant (1892) and the name must be credited to him.

Sinopsaltria gen. nov.

Head including the eyes as wide as the base of the mesonotum; length of head shorter than the space between the eyes; ocelli less than twice the distance from the eyes as from each other; front prominent, deflected anteriorly. Pronotum a little longer than the head and shorter than the mesonotum (excluding basal cruciform elevation), with the lateral margins more or less

laminately expanded, but not toothed, its posterior lateral angles lobately produced. Abdomen in male longer than the space between the apex of the head and the base of the cruciform elevation; tympanal coverings rudimentary, both shorter and narrower than the tympana, leaving the greater part of the tympana exposed. Face globose, with obsolete striations. Front femora spiny beneath. Metasternum elevated at the middle with a posterior process directed backward. Opercula short, widely separated. Tegmina and wings opaque, the former elliptical ovate in shape, the length about three times their breadth; ambient vein close to the margin; apical areas eight in number, long and narrow; length of basal cell more than two times its breadth; wings with six apical areas, the claval area greatly expanded. Rostrum exceeding the intermediate coxæ.

The systematic position of the genus *Sinopsaltria* is between *Balinta* and *Formotosena*. This genus, in general, resembles *Tosena* Amyot et Serville; however, it can easily be separated from the latter by the rudimentary tympanal coverings. It is also close to *Formotosena* Kato, but the lateral margins of the pronotum are not toothed, the tegmina are elongate, and more or less elliptical ovate in outline, and the ambient vein is very close to the margin.

Genotype: *Sinopsaltria bifasciata* sp. nov.

Distribution: Kweichow Province, Western China.

Sinopsaltria bifasciata sp. nov. (Pl. I, Fig. 2)

MALE. Body black. Eyes brownish ochraceous; ocelli pinkish. Pronotum with the anterior margin turned up to form a narrow elevated band which is testaceous laterally; the lateral margins and posterior lateral lobes, neutral orange (Seguy). Mesonotum with the lateral oblique depressed areas brownish black; abdomen above grape black in color, with the posterior segmental margins shining black; tympanal coverings concolorous, rudimentary, convexly rounded anteriorly; tympana largely exposed. Eighth tergite a little longer than the seventh, with the posterior margin broadly rounded. The anal tergite laterally appendiculate.

Tegmina and wings opaque, fuscous, except the tegmina with the extreme base, including basal cell, costal area, costal vein, anterior margin of radial area, claval area, a broad fascia across the tegmen from the apical portion of the radial area to the hind margin, and the basal half of the wing, neutral orange; veins piceous, margined with greyish black, the latter diffusing gradually; second apical area of tegmen very short, about half the length of the first ulnar area; apical areas three to eight very long.

Front very convex, shining black, only very slightly striated; rostrum exceeding intermediate coxæ; two well-developed spines on the front femora, the basal one at the middle of the femora, large, not erect, lying in apposition with the femora; opercula widely separated, short, not reaching the posterior

margin of the second segment, not covering the tympana laterally, the outer margin of the opercula convex, the posterior margin broadly rounded, the inner margin obtusely angulated.

Abdomen beneath raisin black in color, darker toward the apex, medially and longitudinally keeled; subgenital plate wider than long, the posterior third projecting convexly, the posterior margin emarginate medially. Hypandrium longer than the subgenital plate.

Length of body: 32 mm.; expansion of tegmina: 90 mm.

Female. Abdomen short, about as long as the head and thorax together, very convex above, more or less compressed. Anal tergite as long as eighth tergite. The genital plate lengthened at the central portion but emarginate at its tip.

Length of body: 24 mm.; expansion of tegmina: 88 mm.

Holotype. Male, Kweiting, Kweichow Province, China, June 30, 1930, in the National Institute of Zoology and Botany, Academia Sinica.

Allotype. Female, Kweiting, Kweichow Province, China, June 29, 1930, in the University of Nanking, presented by Dr. S. H. Chen, Academia Sinica.

Leptosemia huasipana sp. nov. (Pl. II, Fig. 6)

Male. Head shorter than the space between the eyes, including the eyes as broad as the mesonotum. Color olivaceous. Vertex with a large spot in the ocellar area which is forked posteriorly, a broad lateral fascia curved posteriorly, and a crescent fascia next to eyes, black. The anterior margins of the vertex widened laterally and an oblong spot on the apex of the front, ochraceous. A longitudinal sulcation behind the median ocellus. Eyes ochraceous. Ocelli pinkish red.

Pronotum longer than the head, obliquely depressed anteriorly, lateral margins slightly ampliate. Color olivaceous, with two central longitudinal fasciæ, much widened near the anterior end and united at the posterior end, lateral margins of the inner area, incisures, and two transverse spots on the posterior lateral lobe, black.

Mesonotum about as long as the head and pronotum together. Color olivaceous. A central linear, longitudinal fascia extending posteriorly to the disk of the cruciform elevation. Three paired black markings lying in apposition on each side of the central linear markings, the innermost pair short and curved inwardly; lateral to the latter is a pair of very short triangular spots, and the outermost pair somewhat L-shaped; all these black fasciæ arising from the anterior margin and margined on both sides by ochraceous. Two black round spots in front of the anterior angles of the cruciform elevation, the latter olivaceous green.

Abdomen much longer than the head and thorax together, greenish olivaceous, somewhat pilose. Tympanal flaps narrower than the orifices, ochraceous.

Posterior segmental margins testaceous; a longitudinal black stripe on the middle of the second tergite and anterior part of the third tergite; a series of fuscous spots darkened and enlarged one after another on the lateral margins of the abdominal tergites. The eighth tergite abruptly narrowed, black, a little longer than the seventh. Anal tergite compressed, posteriorly angularly produced on each side.

Tegmina and wings hyaline, the former with the length about three times its breadth. Tegmina with the venation olivaceous; longitudinal veins of apical part fuscous. Bases of second, third, fifth and seventh apical areas, one spot near the apex of each longitudinal vein, and the outer marginal area infuscated. A slight longitudinal infuscation in the middle of the third, fourth and fifth apical areas. Second apical area shorter than half the length of the first. Wings with the venation fuscous, except the anterior marginal vein of the fourth ulnar area greenish, the anterior margin of the claval area and the outer marginal area of the wing infuscated. The clavus of tegmina and wings greyish.

Body beneath olivaceous green, greyish pilose. The transverse spot between the eyes and face, striations, and an oblong spot on the center of face, cheeks, lateral areas of clypeus, apex of rostrum, all black. A small spot at the base of the front coxæ, the apices of the front, middle and hind femora, bases and apices of tibiae, the tarsi and claws fuscous. Rostrum exceeding the hind coxæ.

Opercula widely separate, small, not covering the orifices posteriorly, convex outwardly, and rounded posteriorly, obtusely angulated inwardly. Color greenish olivaceous, the lateral margins narrowly fuscous.

Abdomen beneath semi-transparent, ochraceous, except testaceous towards the apex. Spiracles covered with white powder. Subgenital plate broad, more than two times its length; posterior fifth inflected downward; the posterior margin broadly rounded. Hypandrium longer than the subgenital plate. Length of subgenital plate and hypandrium much longer than the two preceding sternites.

Length of body: 28 mm.; expansion of tegmina: 70 mm.

FEMALE. Smaller, the abdomen much shorter than that of the male; the greenish tinge is obscure; the genital plate is longer at the middle.

Length of body: 22 mm.; expansion of tegmina: 72 mm.

Holotype: male, Chengtu, Szechwan Province, China, June 25, 1938 (Chen).

Allotype: female, same locality, June 28, 1938 (Chen). Types in the collection of the University of Nanking.

Paratypes: four males, one female, same locality, June 1 to 25, 1938 (Chen). Paratypes deposited in the University of Nanking; the National Institute of Zoology and Botany, Academia Sinica; and the University of Minnesota, U. S. A.

This species is the largest known in this genus. It is allied

with *L. takanonis* Matsum. from the same province (without definite locality), lives in the same habitat, and adults appear almost at the same time. *L. huasipana* has a cylindrical abdomen, quite distinct from the tapering abdomen of *L. takanonis*. The posterior margin of the subgenital plate in *takanonis* is slightly indented; it is entire and not indented in *huasipana*. The former has the combined length of the subgenital plate and hypandrium slightly longer than the two preceding sternites; the latter has it much longer than the two preceding sternites.

The females of these two species are easily distinguishable by their genital plates. In *huasipana,* it is wider and has the same depth near the central and near the lateral positions (Pl. II, Fig. 7). In *takanonis,* it is narrower and has its greatest depth near the central portion (Pl. II, Fig. 8).

Mogannia cyanea Walker

1858. *Mogannia cyanea* Walker, List Homop. Suppl. 40 (N. China).

1938. *Mogannia chekiangensis* Ouchi, J. Shang. Sci. Inst. (3) 4: 97 (Tienmushan).

There is no definite locality for the type specimen, which was collected by Fortune from Northern China. The specimens in the Heude Museum were determined by Kato and were collected at Tienmushan. Ouchi described this as a new species from the same locality. In the collection at the University of Nanking there are three male and two female specimens collected by the writer, also from Tienmushan.

Huechys sanguinea De Geer

1773. *Cicada sanguinea* De Geer, Mem. 3: 221, (18), pl. 33, f. 17 (Chine).

1775. *Tettigonia sanguinolenta* Fabricius, Syst. Ent.: 681 (15) (China).

1924. *Huechys* (*Huechys*) *quadrispinosa* Haupt, Deut. Ent. Zeits.: 220 (Annam, Sikkim, Sumatra).

Haupt (1924) wrote that the Chinese medical insect *H. sanguinea* De Geer was mononymically named "the Sanguinea" by De Geer. He cited the translation of De Geer's work by Goeze

(1778) in Ent. Beitrage, Bd. ii, p. 150, 9, as being the first to use the combination *Cicada sanguinea*. Fabricius described the same species (1775) and named it *Tettigonia sanguinolenta,* from China. I quote here De Geer's original description (1773) Mem. pour serv. a l'hist. des ins., Tom. iii 5e, 221 (18), "Cicada (sanguinea) alis superioribus fuscis, fronte abdomine thoracisque maculis binis sanguineis," with a detailed description in a long paragraph. I therefore maintain that this species should be credited to De Geer.

Huechys philæmata Fabricius

1788. (La cigale chinoise a Taches rouge de sang) Stoll, Cicaden: 3, f. 26 (Chine).
1803. *Tettigonia philæmata* Fabricius, Syst. Rhyng. 42 (47) (China).
1892. *Huechys sanguinea* var. *philæmata* Distant, Mon. Or. Cicad.: 112, t. 3, f. 5 (China, Burma).

Stoll in 1778 described and figured a Chinese insect without a valid name. He called it "La cigale Chinoise a Taches Rouge de Sang."

Fabricius 1788 described and figured a new species, *Tettigonia philæmata.* "T. nigra fronte, scutello utrinque abdomineque sanguineis, alis fusco diaphanis. Habitat in China." "alis fusco diaphanis" distinctly differs from *H. sanguinolenta,* which Fabricius wrote "alis nigris." This character is very constant. Distant, Kato and Liu treated Fabricius' *philæmata* as a variety of *sanguinea,* but it seems fairly reasonable to raise it to specific rank.

Hea fasciata Distant

1906. *Hea fasciata* Distant, Entom. 39: 122 (China).
1938. *Kinoshitaia sinensis* Ouchi, J. Shang. Sci. Inst. (3) 4: 107 (Tienmushan, Hungshan).

Distant described this species on the basis of a specimen from China without definite locality. He obtained it at the sale of the collection of Mr. R. Cholmondeley. The description was published in 1906, but it was too late to be listed in his catalogue. No one mentioned this species afterwards. In 1936 the writer made a collecting trip to Tienmushan, Chekiang Province and met

Father P. O. Piel, the Director of the Heude Museum, Shanghai. He told me about a remarkable cicada collected at Kuling, Kiangsi Province; a robber fly had captured a cicada and Father Piel collected both. It stimulated me to try to collect this species at Hwangshan and Kuling, but in vain. In July, 1940, an English Entomologist, Mrs. Richardson, collected one male specimen at Kuanhsien, Western Szechwan Province. She was kind enough to present this specimen to our collection. When I visited the Heude Museum, Shanghai, in 1940 I examined the cicada specimens. It was found that this remarkable species had also been described by Ouchi as *Kinoshitaia sinensis*. Both Distant and Ouchi gave a very good illustration with their descriptions.

Genus *Melampsalta* Amyot

Genotype: *Cicada musiva* Germar

Melampsalta (Melampsalte) 1847. Amyot, Ann. Soc. Ent. Fr. (2) 5: 155 (351).

Cicadetta (Cigalette) 1847. Amyot, Ann. Soc. Ent. Fr. (2) 5: 156.

Tettigetta (Tettigette) 1847. Amyot, Ann. Soc. Ent. Fr. (2) 5: 156.

Cicadetta	1857.	Kolenati, Mel. Ent. 5: 19.
	1857.	Kolenati, Bull. Soc. Nat. Mosc. 30: 417.
Tettigetta	1857.	Kolenati, Mel. Ent. 7: 24.
	1857.	Kolenati, Bull. Soc. Nat. Mosc. 30: 422.
Melampsalta	1857.	Kolenati, Mel. Ent. 7: 27.
	1857.	Kolenati, Bull. Soc. Nat. Mosc. 30: 425.
	1861.	Stål, Ann. Soc. Ent. Fr. (4) 1: 617.
	1866.	Stål, Hem. Afr. 4: 42.
Cicadetta	1872.	Fieber, Katal. Europ. Cicadinen, 1.
Melampsalta	1890.	Karsch, Berl. ent. Zeits. 35: 112, 123.
Cicadetta	1896.	Melichar, Cicad. Mett. Europ. 8.
Pauropsalta	1904.	Goding and Froggatt, Proc. Linn. Soc. N. S. Wales: 615.
Melampsalta	1905.	Distant, A. M. N. H. (7) 16: 269.
Pauropsalta	1905.	Distant, A. M. N. H. (7) 16: 272.
Urabunana	1905.	Distant, A. M. N. H. (7) 16: 274.
Melampsalta	1906.	Distant, Faun. B. I., Rhynch. 3: 171.

Heptaglena	1911.	Horváth, Ann. Mus. Nat. Hung. 9: 607.
Cicadetta	1912.	Horváth, Ann. Mus. Nat. Hung. 10: 605.
Oligoglena	1912.	Horváth, Ann. Mus. Nat. Hung. 10: 606.
Melampsalta	1918.	Haupt, Stett. ent. Zeits. 79: 86.
Kosemia	1927.	Matsumura, Ins. Mats. 2: 55.
Parasemia	1927.	Matsumura, Ins. Mats. 2: 57.
Leptopsalta	1932.	Kato, Mon. Cicad.: 393.

There has been considerable disagreement as to the correct name for this genus. Stål, Karsch and Distant recognized *Melampsalta* as correct, while Fieber, Melichar and Horváth favored *Cicadetta*. The name *Melampsalta* has priority if it is regarded as established by Amyot when published in 1847. This generic name was proposed and accompanied by a description, length measurements and definite type locality, but no species name was mentioned. The International Commission of Zoological Nomenclature has ruled in Opinion 46 that "In genera published without mention, by name, of any species, no species is available as genotype unless it can be recognized from the original generic publication." Amyot's description was based entirely on color together with a length measurement and a type locality. Kolenati (1857) was able to recognize the species from Amyot's original description and assigned a single species, *Melampsalta musiva* Germar var. *caspica* Kolenati, to *Melampsalta*. Several subsequent workers in Homoptera have approved Kolenati's recognition of *musiva* Germar as the species Amyot originally described, and have therefore accepted *Melampsalta* as a valid monobasic genus with *M. musiva* Germar as genotype. One would have to prove that Kolenati was entirely wrong in order to invalidate the name *Melampsalta* and bring into consideration *Cicadetta* as the next available name. I think that it would be almost impossible to prove that Kolenati was wrong in his interpretation of the species that Amyot intended to describe, and therefore accept *Melampsalta* as the correct name rather than *Cicadetta*. Under these conditions the name *Melampsalta* must be credited to Amyot and date from 1847.

This is a very large genus including about one hundred and twenty species with almost a cosmopolitan distribution (except

Neotropical Region); it is an especially dominant group in Australia and New Zealand.

Recent workers in this group have attempted at various times to subdivide *Melampsalta* into additional genera (see synonyms above), but none of these have been generally accepted as having either generic or subgeneric value.

Melampsalta fuscoclavalis sp. nov. (Pl. II, Fig. 10)

Male. Ground color of body black. Head and thorax greyish pilose. Length of head shorter than the distance between the eyes, and head including the eyes narrower than the base of the mesonotum. Front testaceous red with two large black spots one on each side. Vertex medially longitudinally sulcate, its anterior lateral margins convex. Vertex testaceous red with two small faint black round spots in front of the median ocellus, the area lateral and posterior to the lateral ocelli black. Eyes piceous brown, ocelli red.

Pronotum longer than the head, narrowed anteriorly, deflected laterally, its lateral margins sinuate, the anterior lateral angle entire. The inner area of pronotum entirely black, the anterior extreme edge, lateral and posterior margins, a central longitudinal fascia, slightly widened anteriorly and much widened near the posterior end where there is a median black spot, all testaceous red.

Mesonotum black with two obconical spots on the disk margined with testaceous red, the oblique depressed lateral marginal area, the cruciform elevation and its anterior and posterior arms, testaceous red.

Abdomen about as long as the head and thorax together, gradually attenuated posteriorly; in cross section, triangular in shape. The first tergite, a spot on each lateral area of the second tergite, posterior margins of the third to seventh tergites, the posterior portion of the eighth tergite, all testaceous. The eighth tergite with long greyish pile. The posterior margin of the eighth tergite a little indented medially. Anal tergite medially longitudinally keeled, and produced posteriorly into a spine.

Tegmina and wings hyaline. Breadth of tegmina more than one-third their length. Nodal line indistinct. Basal cell about three times as long as its breadth. Costal membrane and costal vein testaceous red. Venation of the basal two-thirds of tegmen fuscous brown, of the apical third piceous, the extreme base and clavus sanguineous. Veins M and Cu contiguous only at the basal points. Wings with veins fuscous, some parts piceous, the margins of claval area and basal part of clavus infuscated.

Body beneath reddish ochraceous, thickly, greyish pilose. Face longitudinally sulcate, only slightly striated. Striations of face, disks of cheek, antennæ, posterior two-thirds of rostrum, mesonotum, wedge-shaped spots on front coxæ, spot on each intermediate and hind coxæ, streaks on intermediate and hind femora and tibiæ, all black. Rostrum exceeding the middle coxæ. Front femora strongly spined beneath, the basal spine largest, the apical one smallest and bifid to form two tiny spines.

Abdomen beneath black, the posterior segmental margins of the second to sixth sternites, greater part of subgenital plate, and hypandrium, all testaceous red. Subgenital plate narrowed, deflected, and flattened at the posterior third, a little longer than the two preceding segments together, very convex, longer than wide. Opercula separated at their inner margins, not quite reaching the posterior margin of the second segment, their lateral margins expanded at the base, then narrowed, their posterior margins convexly rounded, their inner margins obtusely angulated; disk of each operculum depressed.

Length of body: 20 mm.; expansion of tegmina: 52 mm.

Holotype: male Chungnanshan, Shensi Province, China, May 1, 1936, in Fan Memorial Biological Institute, Peiping.

This species resembles *M. radiator* Uhler from Mukden and Japan in general appearance. The hypandrium in *M. radiator* is about as long as wide, the subgenital plate about as long as the three preceding sternites. *M. fuscoclavalis* is allied with *M. wulsini* Liu because of the breadth of the head and the length of the subgenital plate, but it differs from the latter by having veins M and Cu contiguous instead of fusing. The color markings of the two species are distinctly different.

Melampsalta fuscoclavalis var. **chungnanshana** var. nov.

MALE. Head black, a spot on the apex of the front, anterior lateral margins of vertex and a longitudinal median fascia near the base of vertex, testaceous red. Pronotum without a median longitudinal fascia. Mesonotum with two angular spots on the disk. Face black, with the lateral areas and the apical portion testaceous. Opercula blackish, fuscous at the posterior third. Subgenital plate not flattened at the posterior portion.

Length of body: 20 mm.; expansion of tegmina: 50 mm.

Holotype: male, Chungnanshan, Shensi Province, China, May 1, 1936, in the collection of the University of Nanking.

Paratype: one male specimen collected at the same locality and on the same date with the holotype. The paratype is deposited in the collection of the University of Nanking.

Genus **Subpsaltria** gen. nov.

Head including the eyes narrower than the base of the mesonotum, its length less than the distance between the eyes. Front prominent, deflected anteriorly. Ocelli about the same distance from the eyes as from each other. Pronotum much longer than the head, convex, laterally depressed, obliquely narrowed anteriorly, the posterior angles strongly lobately produced. Mesonotum strongly convex, narrowed posteriorly, its length about as long as the

head and pronotum together. A pair of striated areas present on the anterior lateral sides of the mesonotum. Abdomen of female about as long as the head and thorax together, the lateral margins strongly recurved and very prominent. Face very convex, two median longitudinal ridges separated by a longitudinal sulcus. Anterior femora robust and very strongly spined beneath. Tegmina and wings shining, finely transversely wrinkled; tegmina broad, their length about two and a half times their breadth, the basal cell about three times as long as wide. Tegmina with eight, wings with six apical areas. Rostrum reaching the intermediate coxæ.

Genotype: *Subpsaltria yangi* sp. n.

Distribution: Northwestern China.

The systematic position of this genus is in the subfamily Tettigadinæ which was erected by Jacobi (1907).

The genus *Subpsaltria* appears to be similar to *Paharia* in the subfamily Tibicininæ described by Distant (Ann. Mag. Nat. Hist. (7) 16: 25), except for the presence of a pair of striated areas situated on each of the sides of the mesonotum, and a projecting scraper formed by the base of the claval area of each tegmen.

Subpsaltria yangi sp. nov. (Pl. II, Fig. 5)

Female. Head including the eyes much narrower than the base of the mesonotum, its length less than the space between the eyes. Front prominent, triangularly produced, about as long as the vertex. Color black, thickly brownish pilose, with the posterior area of front, anterior and lateral margins of vertex, the median sulcation behind the median ocellus, all testaceous red.

Pronotum much longer than the head, convex, laterally depressed, obliquely narrowed anteriorly, the posterior angles strongly lobately produced. Extreme edge of pronotum, the median longitudinal fascia, incisures, two oblique spots on the disk, two large lateral spots on the posterior margin and extreme narrow area of lateral margin, all testaceous red.

Mesonotum about as long as the head and pronotum together, strongly deflected on each side. Color black, thickly brownish pilose, two longitudinal fasciæ on the disk curved inwardly and enlarged at the posterior tip, two somewhat triangular spots in front of the anterior angle of the cruciform elevation, anterior lateral obliquely striated areas, all brownish ochraceous.

Tegmina and wings ochraceous, finely transversely wrinkled, with the venation testaceous. Apical areas very short. The extreme base of tegmina and wings, their clavus and claval areas ochraceously sanguineous. The claval area of wings greatly developed.

Abdomen about as long as the head and thorax together, brownish ochraceous; first tergite entirely, and the anterior median half of second tergite, black; the anterior marginal black fasciæ of the third to seventh tergites narrowed gradually; a series of continuous black spots at the middle of the

abdominal tergites, a brownish black marginal spot on the last tergite. Anal tergite triangular in shape, about as long as the two preceding tergites.

Body beneath brownish black, thickly brownish pilose. Face medially longitudinally sulcate. Striations of face, streaks of front coxæ, hind femora and spots on intermediate and hind coxæ, castaneous. Anterior femora robust, strongly spined beneath, the apical spine larger than the basal one, and a very small one scarcely detectable in front of the apical one. Apical half of the rostrum and the spines of the front femora, piceous. Rostrum reaching intermediate coxæ. Abdomen beneath deeply depressed, with the lateral edges strongly developed and very prominent. Surface sparsely pilose, the posterior segmental margins castaneous. Genital plate deflected laterally and deeply cleft centrally.

Length of body: 29 mm.; expansion of tegmina: 82 mm.

Holotype: Chungnanshan, Shensi Province, China, May 3, 1936, in the collection of the University of Nanking.

The name of the species is dedicated to Dr. We-i Yang, the Entomologist of the Fan Memorial Biological Institute.

Subpsaltria sienyangensis sp. nov.

FEMALE. Head and pronotum, thickly brownish pilose; the anterior sulcation, and the posterior area of front, the anterior and lateral margins and the median longitudinal sulcation behind median ocellus, median longitudinal fascia, incisures, two oblique spots on the inner area of pronotum, all testaceous red; pronotum with the extreme lateral edges and the posterior area of the hind margins, brownish ochraceous. Mesonotum black, only sparsely brownish pilose; two median linear fasciæ, the anterior lateral obliquely striated areas and the disk of the cruciform elevation, testaceous red.

FIG. 2. Tegmen and hind wing of *Subpsaltria sienyangensis* sp. n.

Abdomen castaneous; the entire first tergite black, the transverse black fascia widened medially on each of the abdominal tergites from two to seven and a median longitudinal spot on the eighth tergite to form a continuous series of black fasciæ; a series of black spots on the lateral areas of the abdominal segments and the ninth tergite brownish-black.

Tegmina and wings ochraceous, finely transversely wrinkled; venation ochraceous; veins of the tegmina margined on both sides by fuscous black;

basal cell fuscous black. Wings slightly infuscated. The ulnar areas of wings margined with fuscous. The extreme base and claval areas of tegmina and of wings, testaceous sanguineous (Fig. 2).

Body beneath, rostrum and legs, black; face, disk of lora and sternum thickly brownish pilose; face deeply longitudinally sulcate, the sulcus widened at its middle; a spot on the apex of the front, a wedge-shaped fascia on the intermediate and hind coxæ, streaks on the fore, intermediate and hind femora, all testaceous red; rostrum reaching intermediate coxæ, two strong spines and a very minute one beneath front femora. Hind tibiæ spined on outer and inner sides.

Abdomen beneath black, with the posterior segmental margins ochraceous. The female genital plate deeply cleft at the median posterior margin. The length of the genital plate at the middle equal to the length of the preceding segment and at the lateral area equal to two preceding segments measured on the median line.

Length of body: 33 mm.; expansion of tegmina: 86 mm.

Holotype: female, Sienyang, Shensi Province, China, in September, 1939. A somewhat damaged specimen collected by Mr. Y. S. Wu, in the collection of the University of Nanking.

This species is closely allied to *S. yangi* from Chungnanshan. It can be separated easily from *yangi* by the larger size, veins of tegmen margined by fuscous black and the relatively shorter length of the genital plate. In *yangi,* the genital plate of the female is longer than the preceding segment medially, and the greatest length at the lateral area is greater than the two preceding segments measured by the same method.

In both of these Chinese species, the specimens I examined possess a striated area on each of the anterior lateral sides of the mesonotum. I cannot be sure that these striated areas are used for secondary sound production, and the collectors of the specimens did not inform me.

At the lateral sides of the base of the mesonotum there is a somewhat oblong area obliquely situated. It is ochraceous in color, 2 mm. long and 1.5 mm. wide, and is free from hairs. Upon examination of this area, it is seen that the finely, obliquely, parallel, sharp-edged ridges run diagonal to the body axis and are inclined toward the middle. The surface is convex. The number of striations is eighteen. On the tegmina, the base of the claval area supported by the bases of the veins pl. and 1v., which are enlarged and much sclerotized, projects out and is sup-

ported underneath by Va. This projection (Fig. 3, Sc.) functions as a scraper against the striated area (Fig. 3, St.).

When the insect is in repose, the elevated scraper is in a perpendicular position to the ridges of the striated area. If a dull insect pin is scraped across the ridges of the area, a weak sound can be heard. Since only the female specimens are present in our collection, I can only conclude that such secondary stridulating organs are not limited to the male sex as is the case with the primary sound-producing organs.

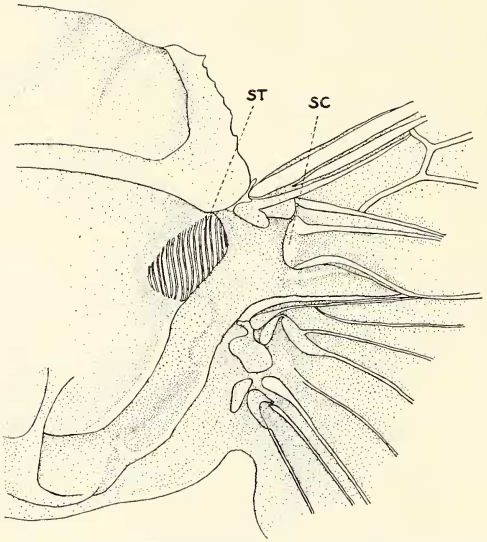


FIG. 3. The secondary stridulating organs of the female *Subpsaltria yangi* sp. n. St.—striated area. Sc.—scraper.

Jacobi (1907) claimed that similar secondary sound-producing organs in the same position were present in the genera *Tettigades, Chonosia* and *Babras,* and the subfamily Tettigadinæ was erected by him to include these three genera. Our specimens, after careful examination, appear to be similar to the genus *Paharia* Dist. in which only four species are known, but are apparently very different because of the presence of these stridulating areas on the mesonotum. Jacobi (1927) mentioned two species and one variety of *Paharia* from Afghanistan, but did not mention the presence of such stridulating organs in those species.

Genus **Sinosena** gen. nov. (Pl. I, Figs. 3 and 4)

Head narrowed, depressed, including the eyes considerably narrower than the base of the mesonotum; pronotum obliquely depressed anteriorly, longer than the head, its lateral margins distinctly toothed; mesonotum large, very convex, a little longer than the head and pronotum together, the cruciform elevation raised and narrowed posteriorly; abdomen short and robust, the tymbals and tympanal coverings absent, the second abdominal segment not elongated laterally and ventrally and entirely the same form as the following segments; opercula in male developed, but widely separated; tegmina and wings hyaline, and maculated; nodal line weakly indicated; breadth of tegmina more than one-third of the length; veins M and Cu of tegmen coalesced for a considerable distance. Tegmina with eight, wings with six apical areas. Rostrum exceeding the hind coxæ, front femora weakly spined beneath. Females larger than the males.

Genotype: *Karenia cælatata* Distan.

Sinosena cælatta Distant

1890. *Karenia cælatata* Distant, Ent. 23: 91 (China: Chia Kou Ho).

1892. *Karenia cælatata* Distant, Mon. Or. Cicad.: 127, t. 13, f. 5 (China: Chia Kou Ho).

This mute species was described from a single female specimen by Distant (1890) from China. The female resembles the female of the species *Karenia ravida,* that has the tympana developed in the male. The author collected twenty-five males and seventeen females at Tsaopao, Western Szechwan Province, in a big forest belonging to a Lama Temple, but was not able to obtain a single specimen outside the forest, in the nearby regions.

In the more primitive genera *Platypedia* and *Neoplatypedia* of the Nearctic Region, the tympanum is absent, the metepimeron is not prolonged posteriorly to form the operculum, the abdomen is attenuated and the genital plate of the male is lengthened. All these characters demonstrate an archaic relation with the ancestor of the species of *Tibicina* and its allies. On the other hand, the primitive species *Sinosena cælatata* Dist. has the opercula developed in both sexes, has a robust body, the tegmina maculated, a weak nodal line and very large size; all of which would seem to indicate a relation with the ancestor of the tribe *Dundubiini,* which is the most dominant group in the Oriental Region.

LITERATURE CITED

AMYOT, C. J. B. 1847. Entomologie Francaise. Rhynchotes. Ann. Soc. Ent. Fran., (2) 5: 143–238, pl. 2, 7.

AMYOT, C. J. B., AND A. SERVILLE. 1843. Histoire Naturelle des Insectes. Hémiptères. Paris, pp. 455–483.

ASHMEAD, WM. H. 1888. A proposed classification of Hemiptera. Entom. Americ., 4: 67.

BUCKTON, G. B. 1890–1891. Monograph of the British Cicadæ or Tettigidæ, 2 vols.

BURMEISTER, H. C. C. 1833. Handbuch der Entomologie. Bd. 2: 99–183.

CHINA, W. E. 1925. The Hemiptera collected by Prof. J. W. Gregory's expedition to Yunnan, with synonymic notes on allied species. Ann. Mag. Nat. Hist., (9) 16: 449–485, fig. 1–5.

DE GEER, C. 1773. Mémoires pour serv. à l'histoire des insectes. Tom. III, 5e mém. des cigales, Stockholm, pp. 151–228.

DELETANG, L. F. 1919. Contribución al estudio de los Cicádidos (Cicadidæ) argentinos. Anal. Soc. cient. Argentina, 88: 25–94, 17 figs.

DISTANT, W. L. 1887. Descriptions of two new species of Cicadidæ. A. M. N. H., (5) 20: 415–416.

———. 1889–1892. A Monograph of Oriental Cicadidæ. Lond., ix + 158, 15 pls.

———. 1890. Descriptions of Chinese species of the homopterous family Cicadidæ. Entomologist, 23 (322): 90–91.

———. 1905. Rhynchotal notes. . . . xxxiii. A. M. N. H., (7) 16: 22–35.

———. 1905. Rhynchotal notes. . . . xxxv. A. M. N. H., (7) 16: 265–281.

———. 1906. Description of a new genus and species of Cicadidæ from China. Entomologist, 39 (517): 121–122, 1 pl.

———. 1906. The Fauna of British India, including Ceylon and Burma. Rhynchota, vol. 3, Lond., xiv + 503.

DRURY, D. 1773. Illustrations of exotic entomology, containing upwards of six hundred and fifty figures and descriptions of foreign insects, vol. 2, 74.

FABRICIUS, J. C. 1775. Systema entomologiæ, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus, pp. 678–681, 831.

———. 1787. Mantissa Insectorum, sistens species nuper detectas adiectis synonymis, observationibus, descriptionibus, emendationibus, vol. 2: 265–267.

———. 1794. Entomologia systematica emendata et aucta, secundum classes, ordines, genera, species, adjectis synonimis, locis, observationibus, descriptionibus, vol. 4: 16–25.

———. 1803. Systema Rhyngotorum secundum ordines, genera, species, adiectis synonymis, locis, observationibus, descriptionibus, vol. 6: 33–42.

Fieber, F. X. 1872. Katalog der europäischen Cicadinen. . . . Wien, 1.
Germar, E. F. 1821. Bemerkungen über einige Gattungen der Cicadarien. Germ. Mag. d. Ent., 4: 1–106.
———. 1830. Species Cicadarium enumeratæ et subgenere distributæ. *In* Dr. Theodor Thon, Ent. Archiv. Jena, 2 (2): 1–8.
———. 1833. Conspectus generum Cicadarium. Rev. Silb., 1: 174–184.
———. 1834. Observations sur plusieurs espèces du genre *Cicada* Latr. Rev. Silb., 2: 49–82, pls. 19–26.
Goding, F. W., Froggatt, W. W. 1904. Monograph of the Australian Cicadidæ. Proc. Linn. Soc. New South Wales, 29: 561–670.
Handlirsch, A. 1925. Systematische Übersicht. *In* Schröder, Chr.: Handbuch der Entomologie, Bd. III: 1115–1117.
Haupt, H. 1918. Neue Homoptera aus dem Provinzial-Museum Hannover. Stett. ent. Zeit., 79: 82–90.
———. 1923. Die Homoptera der Tibetreise W. Stötzners. Deut. ent. Zeits., 1923: 295–306, 3 figs.
———. 1924. Die gattung *Huechys* Amy. et Serv. (Hom.). beiträge zu einen Monographie. Deut. ent. Zeits., 1924: 201–225, 3 figs.
Horváth, G. 1911. Hemiptera nova vel minus cognita e regione Palaearctica. II. Ann. Mus. Nat. Hung. 9: 573–610, 2 figs.
———. 1912. Miscellanea Hemipterologica. viii–xii. Ann. Mus. Nat. Hung., 10: 599–609, fig. 1–7.
Jacobi, A. 1907. Ein Schrillapparat bei Singcicaden. Zool. Anz., 1907: 67–71, fig. 1–3.
———. 1927. Singzicaden von Afghanistan (Homop.). Entom. Mitteil., 16 (3): 215–218.
Karsch, K. 1890. Beiträge zur Kenntnis der Singcikaden Afrika's und Madagaskar's. Berl. ent. Zeit., 35: 85–130.
Kirkaldy, G. W. 1909. A list of the Hemiptera of Oriental China. Ann. Soc. Ent. Belg., 53: 117–183.
Kolenati, F. A. 1857. Meletemata Entomologica. Fasc. vii. Bull. Soc. Nat. Moscow, 30 (2): 399–444, pl. 5–6 (extract).
Latreille, P. A. 1825. Cicadaires. Cicadariæ. Familles Naturelles du Règne Animal. Paris, pp. 426.
Linné, C. 1754. Museum . . . Adolphi Friderici . . . Cicada, pp. 84.
———. 1758. Systema Naturæ. Regnum Animale, ed. decim. Holmiæ, pp. 341, 434–436.
———. 1764. Mus. S. R. M. Ludov. Ulr. Reg. Hollminæ: 160.
Liu, G. 1939. Notes on the Cicadidæ of the Heude Museum, Shanghai. Notes D'entom. Chin., 6 (9): 149–195, 1 fig.
———. 1940. New Oriental Cicadidæ in the Museum of Comparative Zool. Bull. Mus. Comp. Zool., 87: 73–117, pls. 1–7.
Matsumura, S. 1927. New species of Cicadidæ from the Japanese Empire. Ins. Matsum., 2 (1): 46–58, pl. 2.
Melichar, L. 1896. Cicadinen (Hemiptera-Homoptera) von Mittel-Europa. Berlin, xxvii + 364.

———. 1902. Homopteren aus Westchina, Persien, und dem Süd-Ussuri-Gebiete gesammelt von Potanin, Berezovski, Zarudny und Jankovaski. Ann. Mus. Zool. Acad. Imp. Sci. St. Pétersb., 7: 76–146.

MOTSCHULSKY, V. DE. 1861. Études entomologique. Dixième année. Insectes du Japaon. Helsingfors, 24 pp.

———. 1866. Catalogue des insectes reçus du Japon. Bull. Soc. Imp. Nat. Moscou, 39: 163–185.

MOULTON, J. G. 1923. Cicadas of Malaysia. Journ. Fed. Malay Sta. Mus., 11 (2): 67–177, 5 pls.

MYERS, J. G. 1929. Insect singers, a natural history of the cicadas, xix + 304. (Good bibliography.)

OLIVIER, A. G. 1790. Encyclop. Méthod. Histoire naturelle. Insectes. Paris, vol. 5: 735–762.

OUCHI, Y. 1938. A preliminary note on some Chinese cicadas with two new genera. Journ. Shang. Sci. Inst., (3) 4: 75–111, 2 pls.

RÉAUMUR, R. A. F. DE. 1734–1742. Mémoires pour servir à l'histoire des Insectes. Quartrième Mémoires. Sur les Cigales; et sur quelques mouches de genre approachant du leur. Tom V; 145–206, pls. 16–29.

SCHMIDT, E. 1919. Beiträge zur Kenntnis aussereuropäischen Zikaden (Rhynchota-Homoptera). Stett. ent. Zeit., 80: 365–382.

———. 1933. Verzeichnis der Cicaden des Chineseschen Reiches. Pek. N. H. Soc. Bull., 7: 117–133.

SCHMACHER, E. 1915. H. Sauter's Formosan-ausbeute. Homoptera. Suppl. Entom., 4: 108–142, 5 figs.

SIGNORET, V. 1849. Description de quelques cigales voisines de la *Cicada atrata*, Fabr. Rev. Mag. Zool., (2) 1: 405–410, pl. 10.

STÅL, C. 1861. Genera nonnula nova Cicadinorum. Ann. Soc. Ent. Fran., (4) 1: 613–622.

———. 1863. Hemipterorum exoticorum generum et specierum nonnullarum novarum Descriptiones. Trans. Ent. Soc. Lond., (3) 1: 571–603.

———. 1866. Hemiptera Africana descripsit Carolus Stål. Holmiae, 4 vols.

———. 1870. Hemiptera insularum Philippinarum.—Bidrag till Philippinska öarnes Hemipter-fauna. Öfv. Vet.-Ak. Förh., 27: 607–776, pls. 7–9.

STOLL, C. 1781–1792. Abbildungen und Beschreibungen der Cikaden und Wanzen, . . . Nürnberg, trans. from Dutch. 7 parts. Cicadidæ, 1781.

TILLYARD, R. H. 1926. Fam. Cicadidæ, pp. 160–162. *In* "The Insects of Australia and New Zealand." Sydney: Angus & Robertson, Ltd., 560 pp.

UHLER, P. R. 1862. Homoptera of the North Pacific exploring expedition under Com'rs. Rodgers and Ringgold. Proc. Acad. Nat. Sci. Phila., 1861: 282–284.

Van Duzee, E. P. 1916. Check list of the Hemiptera of America north of Mexico. N. Y. Ent. Soc., 1916: xi + 111.

———. 1917. Catalogue of the Hemiptera of America north of Mexico excepting the Aphididæ, Coccidæ and Aleurodidæ. Univ. Cal. Publ., Agr. Expt. Sta. Tech. Bull. (Entomology), 2: xiv + 902.

Walker, F. 1850–1852. List of the specimens of Homopterous insects in the collection of the British Museum. 4 parts, Cicad. pt. 1.

———. 1858. List of the specimens of homopterous insects in the collection of the British Museum, Supplement.

Westwood, J. O. 1840. An introduction to the modern classification of insects. 2 vols. Lond. Cicadidæ, vol. 2: 414–450.

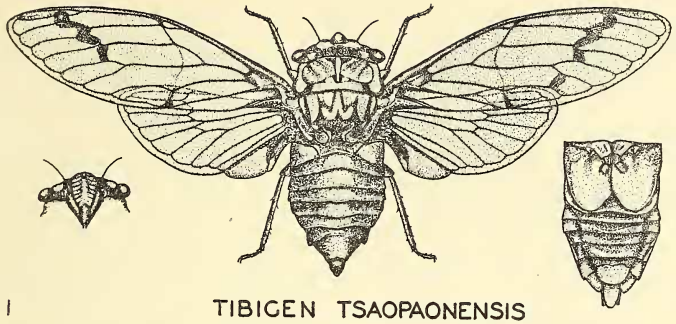
———. 1842. On the opaque-winged species of cicada, from India. Arcan. Entom., 2: 13, pl. 51.

———. 1842. Illustrations of some genera belonging to the family Cicadidæ. Arcana Entom., 1: 91–92.

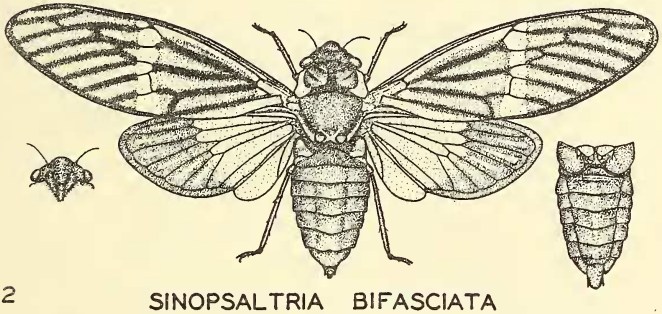
White, A. 1844. Descriptions of some new species of Coleoptera and Homoptera from China, A. M. N. H., (1) 14: 422–426.

PLATE I

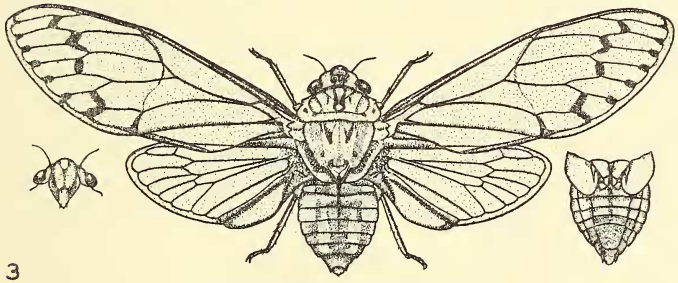
Figure 1. *Tibicen tsaopaonensis* sp. nov., type.
Figure 2. *Sinopsaltria bifasciata* sp. nov., type.
Figure 3. *Sinosena cœlatata* Distant, Western Szechwan, China, Aug. 9, 1938.
Figure 4. *Sinosena cœlatata* Distant, Western Szechwan, China, Aug. 5, 1938.



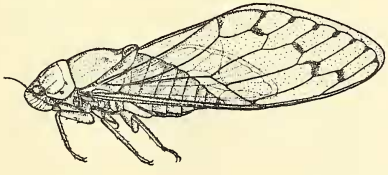
1 TIBICEN TSAOPAONENSIS



2 SINOPSALTRIA BIFASCIATA



3 SINOSENA CAELATATA

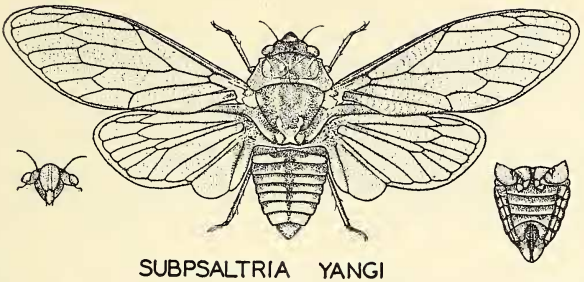


4 SINOSENA CAELATATA

Chinese Cicadas

PLATE II

Figure 5. *Subpsaltria yangi* sp. nov., type.
Figure 6. *Leptosemia huasipana* sp. nov., type.
Figure 7. Female genital plate of *L. huasipana*.
Figure 8. Female genital plate of *L. takanonis*.
Figure 9. *Chremistica nana* sp. nov., type.
Figure 10. *Melampsalta fuscoclavalis* sp. nov., type.

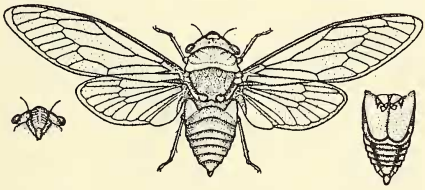


5 SUBPSALTRIA YANGI

6 LEPTOSEMIA HUASIPANA

7 LEPTOSEMIA HUASIPANA

8 LEPTOSEMIA TAKANONIS



9 CREMISTICA NANA

10 MELAMPSALTA FUSCOCLAVALIS

Chinese Cicadas